in database

DELAWARE GEOLOGICAL SURVEY
WELL SCHEDULE

DGSID DC53-58 DNREC Id 202206

TEM

Record By [redacted] (code) Date Filed 04-11-30

GENERAL SITE DATA

Potomac well

Data Source: D G **N** O R S U (driller, DGS, DNREC, owner, other reported, USGS, unknown) Local Id PW-202 DRBC Id

Northing 438293. Easting 445695. N/E Method: S L **M** F G (gps, loran, map, field, GIS) N/E Accuracy: **S** F T W (sec, 5sec, 10sec, 20sec)

County: 1 **3** 5 (Kent, New Castle, Sussex) Quadrangle SAG (code)

Topo Setting: A B C D E **F** I M O R S V (Atlantic Offshore, Del Bay, stream channel, depression, dune, flat, Indian River Bay, marsh, offshore, Rehoboth Bay, hillside, valley flat)

Drainage Basin RED LION CR 107 (code) Altitude 61. Altitude Method: A L **M** R D (altimeter, level, map, relative, DEM)

Delaware Mod. Grid Project 706 STD CHL (Methuen)

OWNER IDENTIFICATION

Agency Name: ~~Delaware Chemical~~

First Middle Initial Last

Address (code)

Address

City Delaware City State DE Zip Code

WELL DESCRIPTION

Drilling Contractor Uni-Tech Drilling, Inc. (code)

July 30 2004

Date Drilled 04-06-30 Depth Drilled 167.

Drill Method: A B C D E J **M** P R U V W (air rotary, bored, cable tool, dug, augered, jetted, hydraulic rotary, air percussion, reverse rotary, unknown, driven, wash-driven)

Well Finish: C H N O P **S** T U W (concrete, horizontal gallery, not finished, open hole, perforated or slotted, screen [illegible], sand, unknown, walled)

Site Use

A	E	G	O	P	R	T	W	Z
anode	eng. test boring	geo/hydro research	observation	oil or gas	recharge	test	withdrawal	other

Site Status

A	D	I	N	S	U
abandoned	destroyed	in use	not in use	standby	unknown

Water Use

A	C	D	F	G	I	M	O	P	R	U
agricultural	commercial	domestic	fire	geothermal	industrial	observation	other	public supply	irrigation	unknown

Replacement Well Y N

Replacement Reason

CL	FE	IW	NI	OT	WF
chlorides	iron	inadequate quantity	nitrates	other	well failure

Geologic Unit Kpt (Code)

Aquifer Name Kpt (Code)

NOTES

10" borehole

Gravel Pack

Y N

Top 136

Bottom 165

Static Water Level

Grout

Y N

Top 0

Bottom 136

Type

B	C	G	O	M	U
Bentonite	Cement	Cuttings	Other	Bent/Cmt Mixture	Unknown

DGS ID Dc53-5P

- [x] Water Level
- [ ] Aquifer Test
- [ ] Driller's Log
- [x] Geophysical Log
- [x] Geologist's Log
- [x] Rock Samples
- [ ] Field Water Quality
- [ ] Lab Water Quality
- [ ] Supplemental File

CASING

Top of casing	bottom of casing	diameter	material
0.	81.	6.	S
-2.9	140.	2.	S stainless
-3.	0.	4.	S

Casing Material: B brick; C concrete; F fiberglass; G galvanized; O other; P PVC; R rock or stone; S steel; U unknown

OPENINGS

Top of opening	bottom of opening	diameter	material
140.	150.	2.	R

Opening Material: A brass; B bronze; C concrete; F fiber-glass; G galvanized; M monel; N none; P PVC; R stainless steel; S steel; U unknown

GEOPHYSICAL LOG SCHEDULE

DGS ID: Dc53-5p

Record By: | TEM (code) | Date Filed: 04-11-30

GEOPHYSICAL LOG DATA

Date Logged	04-07-30 (7/30/2004)	04-07-30	04-07-30	- -
Log Type	GAM	MPE	TEM	
Log Source	(G) R S U (DGS) Other USGS Unknown	(G) R S U (DGS) Other USGS Unknown	(G) R S U DGS Other USGS Unknown	G R S U DGS Other USGS Unknown
Log Start	164.9	164.8	164.8	
Log Stop	0.7	0.7 ~~164.8~~	0.7	
Measuring Point	(GS) KB O TC Grd. Sfc. Kelly Bushing Other Top Casing	(GS) KB O TC Grd. Sfc. Kelly Bushing Other Top Casing	(GS) KB O TC Grd. Sfc. Kelly Bushing Other Top Casing	GS KB O TC Grd. Sfc. Kelly Bushing Other Top Casing
Correction	0			

LOG TYPES

CAL - Caliper
DFT - Differential Temperature
DSP - Differential Single Point
FLO - Flowmeter
GAM - Gamma
GGL - Gamma Density
GRS - Gamma Spectral
IND - Induction
MPE - Multiple Point Elec.
NEU - Neutron
SFL - Spherically Focused
SON - Sonic
SPE - Single Point Elec.
TEM - Temperature
OTH - Other

NOTES

Sample_Method:	SSC				
Record_By:	TEM				
Collected By:	TEM				
Agency:	DGS				
SAMPLE_ID	DGSID	DATE	START_ DEPTH	STOP_ DEPTH	GEO_UNIT
100652	Dc53-50	040630	76	78	Kmv
100653	Dc53-50	040630	78	80	Kmv
100654	Dc53-50	040630	82	84	Kmv
100655	Dc53-50	040630	84	86	Kmv
100656	Dc53-50	040630	86	88	Kmv
100657	Dc53-50	040630	88	90	Kmv
100658	Dc53-50	040630	90	92	Kpt
100659	Dc53-50	040630	92	94	Kpt
100660	Dc53-50	040630	94	96	Kpt
100661	Dc53-50	040630	96	98	Kpt
100662	Dc53-50	040630	98	100	Kpt
100663	Dc53-50	040630	100	102	Kpt
100664	Dc53-50	040630	102	104	Kpt
100665	Dc53-50	040630	104	106	Kpt
100666	Dc53-50	040630	106	108	Kpt
100667	Dc53-50	040630	108	109	Kpt
100668	Dc53-50	040630	110	112	Kpt
100669	Dc53-50	040630	112	114	Kpt
100670	Dc53-50	040630	114	116	Kpt
100671	Dc53-50	040630	116	118	Kpt
100672	Dc53-50	040630	118	120	Kpt
100673	Dc53-50	040630	120	122	Kpt
100674	Dc53-50	040630	122	124	Kpt
100675	Dc53-50	040630	124	126	Kpt
100676	Dc53-50	040630	126	128	Kpt
100677	Dc53-50	040630	128	130	Kpt
100678	Dc53-50	040630	130	132	Kpt
100679	Dc53-50	040630	132	134	Kpt
100680	Dc53-50	040630	134	136	Kpt
100681	Dc53-50	040630	136	137	Kpt
100682	Dc53-50	040630	142	142.5	Kpt
100683	Dc53-50	040630	144	144.5	Kpt
100684	Dc53-50	040630	146	146.5	Kpt
100685	Dc53-50	040630	148	148.5	Kpt
100686	Dc53-50	040630	150	151	Kpt
100687	Dc53-50	040630	158	158.5	Kpt
100688	Dc53-50	040630	165	167	Kpt

Samples taken from Metachem cores for for P&S on 5/25/2005		
DGSID	**SampleID**	**Driller Depth**
Dc53-49	28313-1.0	83
Dc53-49	28314-1.6	85.6
Dc53-49	28317-0.7	90.7
Dc53-49	28322-2.0	102
Dc53-50	100657-0.6	88.6
Dc53-50	100659-0.5	92.5
Dc53-50	100666-0.3	106.3
Dc53-50	100671-0	116
Dc53-50	100678-0.9	130.9
Dc53-51	100697-1.8	83.8
Dc53-51	100711-1.3	113.3
Dc53-51	100723-0	140

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-3665
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

http://www.dnrec.state.de.us/

WELL COMPLETION REPORT MUST BE RETURNED WITHIN 30 DAYS OF CONSTRUCTION. A WELL FORMATION LOG MUST BE INCLUDED WITH THIS REPORT.

- OFFICIAL USE ONLY -

WELL COMPLETION REPORT

Dc53-50

PAGE _____ OF _____ PAGES

ILLEGIBLE OR INCOMPLETE FORMS WILL BE RETURNED

PLEASE PRINT OR TYPE - USE BLUE OR BLACK INK ONLY

Permit # of completed well: 2D2206 Local ID: PW-2

Tax Map/Parcel #: 12-008.00-004

Property Owner: USEPA

Water Well Contractor: Uni-Tech Drilling WC Lic #: 928

Well Driller in Charge during Construction: Joseph Jester

WELL CONSTRUCTION METHOD

- ☐ Augered
- ☐ Bored
- ☐ Cable Tool
- ☐ Driven
- ☐ Jetted
- ☐ Air Rotary
- ☑ Mud Rotary
- ☐ Reverse
- ☐ Washed
- ☐ Other (Specify): _____

Total Depth of Excavation: 167

Construction Date: 7-26-04

CASING INSTALLATION:

	INNER CASING (1)	(2)	(3)	(4)	(5)	(6)	OUTER CASING
CASING TOP:	+2						0
CASING BOTTOM:	140						81
CASING DIAMETER:	2"						6"
CASING MATERIAL:	SS						S.S.

SCREEN INSTALLATION

SCREEN TOP:	140					
SCREEN BOTTOM:	150					
SCREEN DIAMETER:	2"					
SCREEN MATERIAL:	SS					

Gravel Pack From: 136 ft. To: 152 ft.

Grout Type: ☑ Cement ☐ Bentonite Clay

☐ Other: _____ From: 0 ft. To: 132 ft.

Type of Non-Grout backfill of Well Annulus: Bentonite

From: 136 To: 132

Static Water Level: 50 ft. ☑ Below OR ☐ Above Ground Surface

On (date): _____

Pumping Water Level: _____ ft. On (date): _____

After: 2.5 hrs. Pumping at: 3 GPM

Was a Geophysical Log Taken? ☑ YES ☐ NO

WELL HEAD COMPLETION:

Type:
- ☐ Pitless Adapter
- ☐ Standard "T"
- ☐ Well Pit
- ☐ Pad Mount
- ☑ Other - Specify: Above Ground Protector

Well Head Completed: _____ inches ☑ Above (OR) ☐ Below Ground Surface

Was the Well Tag attached in accordance with current regulations?

☑ YES ☐ NO If "NO", Please Explain: _____

TYPE OF PERMANENT PUMP INSTALLED:

Pump Manufacturer: N/A

Rated Capacity (GPM): _____

Pump Intake Setting: _____ Ft. Below Ground Surface: _____

Pump Installed By: _____ On (date): _____

The location and construction of this well is in Compliance with all permit conditions and all applicable well construction regulations.

☑ YES ☐ NO

If "NO," attach a copy of the approved well permit showing the revised location clearly marked.

COMMENTS: _____

RECEIVED
OCT 8 2004
WATER SUPPLY

I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT.

Signature - Well Driller in Charge of Well Construction

781
License #

8/30/04
Date

White - DNREC • Canary - Contractor • Pink - Owner

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901
PHONE: 302-739-3665
FAX: 302-739-2296

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT MUST BE RETURNED WITHIN 30 DAYS OF CONSTRUCTION DATE

FORMATION LOG

PAGE _____ OF _____ PAGES

PLEASE PRINT OR TYPE - ILLEGIBLE OR INCOMPLETE FORMS WILL BE RETURNED

PERMIT# 202206 LOCAL ID# PW 2

PROPERTY OWNER USEPA

WELL CONTRACTOR Uni-Tech Drilling Co LIC# 928

DESCRIPTION	TOP OF STRATA	BOTTOM OF STRATA
Sandy Silt - brown	0	7
Sand M dense reddish yellow	7	90
Sand dense light gray	90	120
Clay - reddish gray	120	130
Silt and sand light gray	130	150
Gravel / sand	150	169
Clay - red	160	167

OTHER COMMENTS:

RECEIVED
OCT 8 2004
WATER SUPPLY

I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT

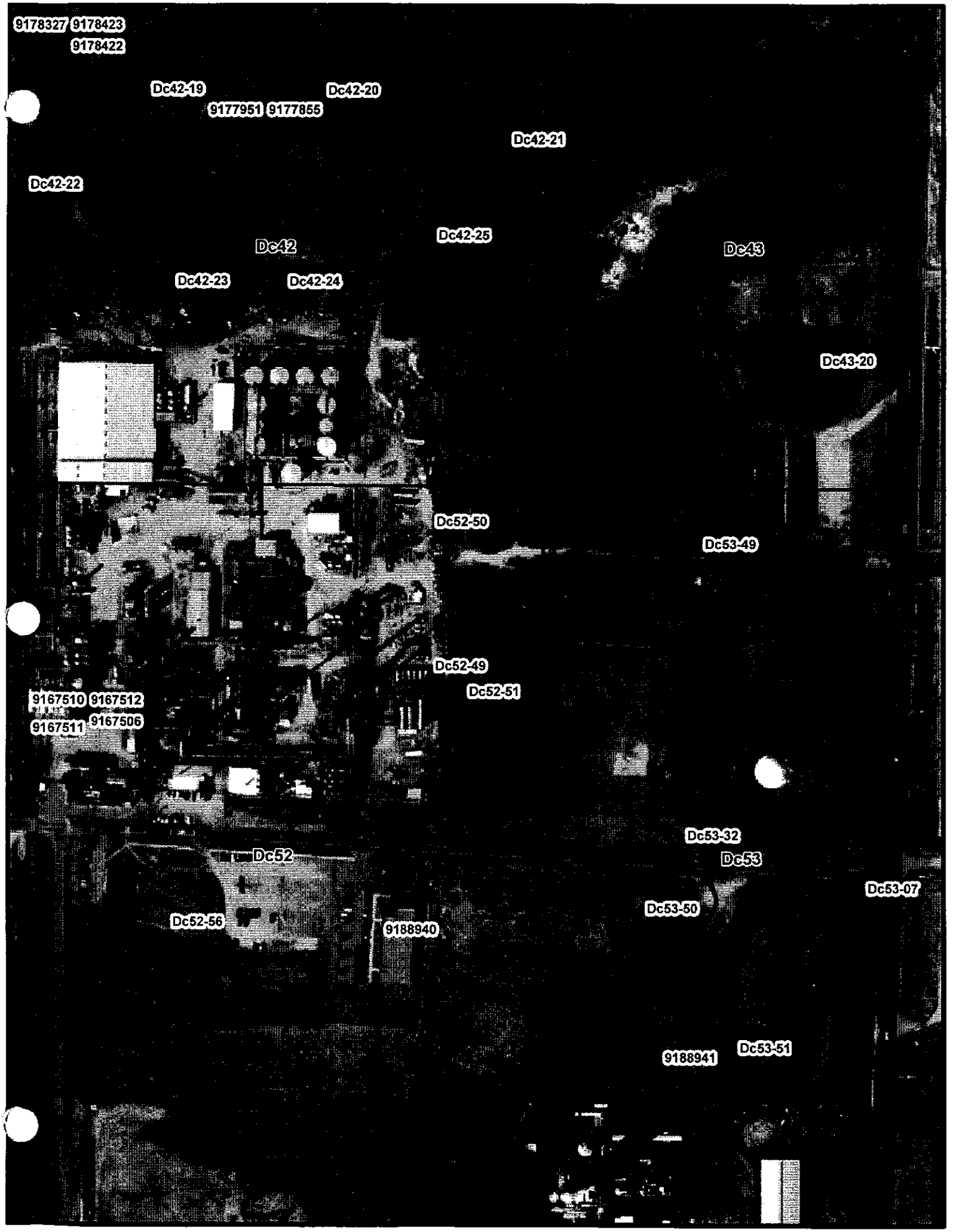
Joseph Foster — Signature of Well Driller In Charge

781 — License#

8/30/04 — Date

White - DNREC • Canary - Contractor • Pink - Owner

Doc. No. 40-08-82-12-11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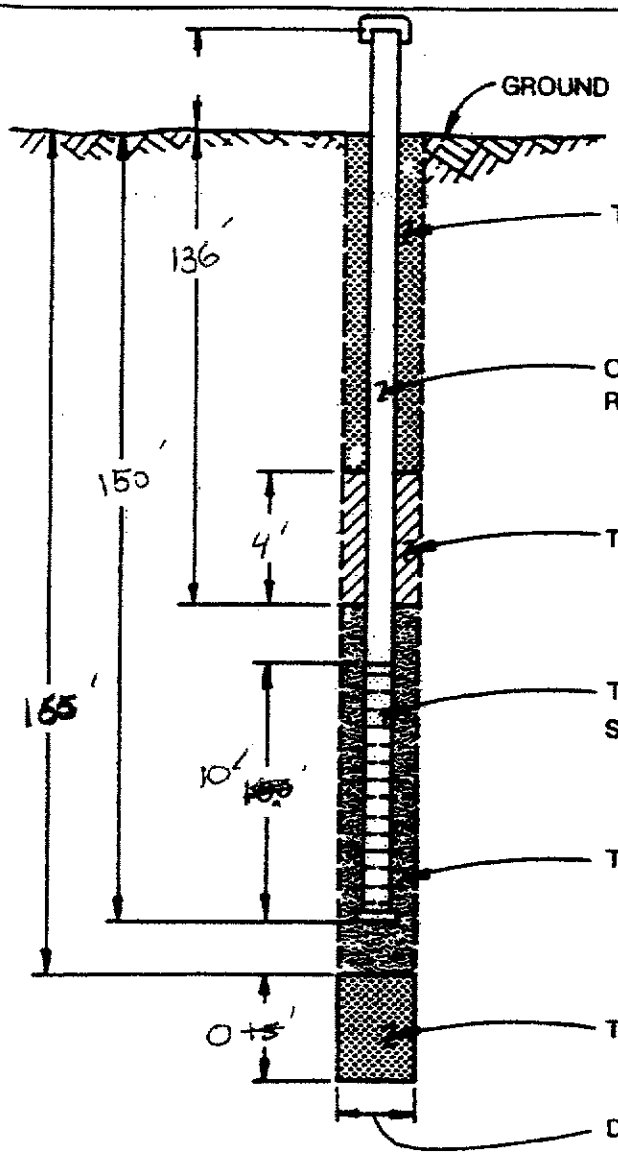
Dc52-56
9188940
9188941
Dc53-51

DC 53-50

PIEZOMETER / WELL INSTALLATION LOG

DE Permit: 202206
NO. PW02

CLIENT: US EPA REGION III	PROJECT: STANDARD CHLORINE		PROJECT NO.: 047118.0123
PROJECT LOCATION: NEW CASTLE, DE	COORDINATES:	TOP OF RISER ELEVATION:	8/02/2004
STRATUM MONITORED: Potomac SAND		INSPECTOR: M. NAPOLITAN	
CHECKED BY:	APPROVED BY:		
DRILLING CONTRACTOR:	DRILL RIG: MIDWAY 1500	DRILLER: J. JESTER	



GROUND SURFACE ELEVATION: _____

TYPE OF SEAL: Cement / Bentonite Grout

O.D. & TYPE OF RISER PIPE: 2" ID 304 Flush Thread Stainless Steel Sch 0.55

TYPE OF SEAL: Bentonite Chips

TYPE AND SIZE OF SCREEN OR OPENINGS: 2" ID 0.020 slot 304 SS wire wrapped Sch 0.55

TYPE OF FILTER: #1 Fisher US. Silica Sand

TYPE OF SEAL: #1 N/A Sand

DIAMETER OF BOREHOLE: 0-81' 10 inch; 81'-165' 6 inch

METHOD OF INSTALLATION: Gravity Sand & bentonite chips; tremmie Grout
Mud Rotary drilling.

REMARKS: Set 6" Steel (ID) Casing in 10" Borehole to 81' BGS. Cement & bentonite grout annulus 81' to 0' (13.2 lbs/gal to 10.5 lbs/gal). 4" protective outer casing locking cap.
TD TOC INNER 152.88' Developed 8/11/2004

DC53-50

BORING NO. PW-02

WASTE SCIENCE AND TECHNOLOGY CORP.

LOG OF BORING

DEL PERMIT# 202206

SHEET 1 OF 6

CLIENT	PROJECT	PROJECT NO.
USEPA REGION III	Standard Chlorine	047123

PROJECT LOCATION	COORDINATES	ELEVATION (DATUM)	TOTAL DEPTH	DATE START
New Castle, DE			167	July 26, 2004

SURFACE CONDITIONS: Field South of Dav. Lee Road / Flat overgrown — DATE FINISH: July 30, 2004

DRILLING CONTRACTOR: Enn-Tech Drilling Co. Inc

DRILL RIG	DRILLER	INSPECTOR
Midway 1500	Joe Jester	M Napolitano

CHECKED BY: | APPROVED BY:

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6"	2ND 6"	3RD 6"	N VALUE	SAMPLE RECOV.	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOV.	RQD RECOV.	PERCENT RECOV.	RQD	DEPTH IN FEET	SAMPLE TYPE	LOG	CLASSIFICATION OF MATERIAL	REMARKS
														1				Advance borehole mud rotary / Sample w/ mw. 2" Split wire line (no spt) 5¼" Drag bit
														2				
														3				
														4				
														5				
SPT	1	7	8	8	16	1.7								6			Sandy SILT; strong brown (7.5YR 5/6); stiff; low plastic, trace mica	0.0 ppm
														7				
														8				
														9				
														10				
SPT	2	6	6	7	13	1.5								1			Sand; reddish yellow (7.5YR 6/8); med. dense; dry; fine to med. grained uniform, sub rounded; silt.	0.0 ppm
														2				
														3				
														4				
														5				
SPT	3	8	12	16	28	0.6								6			coarse SAND; reddish yellow (7.5YR 6/8); Some w/ ANGULAR TO SUB ANGULAR GRAVEL Blocky Drilling - Yellow Coarse Sand in Tip (Possible Cobble - Driller noted angle in Rock Rod)	0.0 ppm
														7				
														8				
														9				
SPT	4	9	16	20	36	0								20			GRAVEL (Cuttings From Above) No Recovery	
														1				
														2				
														3				
														4				
														5				
SPT	5	7	9	11	20	0.86								6			SAND, yellow (10YR 8/6); Coarse to med Grained; Subround; uniform; Cuttings portions; dense	0.0 ppm
														7				
														8				Stop 7/26/2004 @ 25'
														9				
														30				

Permit 202206 DEL.

WASTE SCIENCE AND TECHNOLOGY CORP.

LOG OF BORING

BORING NO. PW02

SHEET 2 OF 6

CLIENT	PROJECT	PROJECT NO.
USEPA REGION III	Standard Chlorine	047123

PROJECT LOCATION	COORDINATES	ELEVATION (DATUM)	TOTAL DEPTH	DATE START
NEW CASTLE, DE			167	7/26/2004

SURFACE CONDITIONS — DATE FINISH: 7/30/2004

DRILLING CONTRACTOR

DRILL RIG	DRILLER	INSPECTOR
Midway 1500	Joe Jester	M. NAPOLITANO

CHECKED BY — APPROVED BY

SAMPLING: SAMPLE TYPE	SAMPLE NUMBER	SET 6"	2ND 6"	3RD 6"	N VALUE	SAMPLE RECOV.	CORING: CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOV.	RQD RECOV.	PERCENT RECOV.	RQD	DEPTH IN FEET	SAMPLE TYPE LOG	CLASSIFICATION OF MATERIAL	REMARKS
SPT	6	22	25	17	42	0.5								30		SAMG; reddish yellow (7.5YR 6/8)	0.0ppm 7/27/2004
														1			
														2			
														3			
														4			
														5			
SPT	7	22	15	20	45	0.7								6		SAMG; WET	0.0ppm
														7			
														8			
														9			
														40			
SPT	8	10	11	14	25	1.1								1		SAME, wet; grading med dense	0.0ppm
														2			
														3			
														4			
														5			
SPT	9	10	11	14	25	1.0								6		SAND, reddish yellow (5YR 6/8),	0.0ppm
														7		med dense; med grained; well sorted	
														8		wet; w/ angular gravels and silt	
														9			
														50			
SPT	10	11	11	13	24	1.2								1		SAMG, more iron stain, some	0.0ppm
														2		iron stone	
														3			
														4			
														5			
SPT	11	9	19	21	40	0.8								6		SAME	0.0ppm
														7			
														8			
														9			
														60			

Permit # 202206

WASTE SCIENCE AND TECHNOLOGY CORP.

LOG OF BORING

BORING NO. PW02

SHEET 3 OF 6

CLIENT	PROJECT	PROJECT NO.
USEPA REGION III	STANDARD CHLORINE	047123

PROJECT LOCATION	COORDINATES	ELEVATION (DATUM)	TOTAL DEPTH	DATE START
NEW CASTLE, DE			124	7/26/2004

SURFACE CONDITIONS	DATE FINISH
	7/30/2004

DRILLING CONTRACTOR	DRILL RIG	DRILLER	INSPECTOR	CHECKED BY	APPROVED BY
UNI TECH	MSDWAY 1500	JOE JESTER	M. NAPOLSTAN		

SAMPLING: SAMPLE TYPE, SAMPLE NUMBER, SET 6", 2ND 6", 3RD 6", N VALUE, SAMPLE RECOV.
CORING: CORE SIZE, RUN NUMBER, RUN LENGTH, RUN RECOV., RQD RECOV., PERCENT RECOV., RQD

SAMPLE TYPE	SAMPLE NUMBER	SET 6"	2ND 6"	3RD 6"	N VALUE	SAMPLE RECOV.	DEPTH IN FEET	CLASSIFICATION OF MATERIAL	REMARKS
SPT	12	17	20	21	41	1.45	1	Same; some quartz gravel	0.0ppm
							2		
							3		
							4		
							5		
SPT	13	7	11	13	24	1.2	6	SAME; grading more coarse	0.0ppm
							7		
							8		
							9		
							70		
SPT	14	9	15	27	42	1.35	1	SAND, reddish yellow (7.5 YR 6/8);	0.0 ppm
							2	Dense; coarse grained; wet; some silt	
SPT	15	15	20	50/6	70+	1.2	3	poorly sorted	0.0ppm
							4	Some gravel (drill chatter) (spoon Refusal)	
SPT	16	15	50/6	—	50+	0.2	5	GRAVEL; Reddish yellow (7.5YR 6/8)	0.0ppm
							6	oxidized; angular; grading to silt	
SPT	17	7	7	8	15	1.85	7	in very end of tip (orange)	
							8	Silty CLAY; very dark greenish gray (GLEY1 3/2 5G)	0.0ppm
SPT	18	8	8	8	16	1.7	9	1250 qu med stiff to stiff, med plastic	
							80	10% -25% mica	
							1		Set 6" steel casing to
							2		80'. 6" BST
SPT	19	8	9	14	23	2.0	3	SAME, 2500 qu, stiff,	0.0ppm 7/29/2004
							4		
SPT	20	5	7	9	16	1.4	5	Same, very stiff	0.0ppm
							6		
SPT	21	7	9	11	20	1.4	7	SAME	0.0ppm
							8		
SPT	22	5	15	50/4	65+	0.8	9	SAME; w/ coarse grained sand in	0.0ppm
							90	tip some gravel	

Permit # 202206

WASTE SCIENCE AND TECHNOLOGY CORP.

LOG OF BORING

BORING NO. PN02

SHEET 4 OF 6

CLIENT	PROJECT	PROJECT NO.
USEPA REGION III		47178

PROJECT LOCATION	COORDINATES	ELEVATION (DATUM)	TOTAL DEPTH	DATE START
			167	7/26/2004

SURFACE CONDITIONS — DATE FINISH 7/30/2004

DRILLING CONTRACTOR

DRILL RIG	DRILLER	INSPECTOR
	J. Jester	M. NAPOLITANO

CHECKED BY — APPROVED BY

SAMPLING							CORING									
SAMPLE TYPE	SAMPLE NUMBER	SET 6"	2ND 6"	3RD 6"	N VALUE	SAMPLE RECOV.	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOV.	RQD RECOV.	PERCENT RECOV.	RQD	DEPTH IN FEET	SAMPLE TYPE	LOG	CLASSIFICATION OF MATERIAL	REMARKS
SPT	23	25	50/2	—	50+	0.4								90			SAND; light gray (10R 7/1); dense	0.0 ppm
														1			Subround; well graded, fine to med	
SPT	24	9	14	17	31	1.1								2			w/ some silt; moist	
														3			CLAY; light gray (10R 7/1); stiff-	0.0 ppm
SPT	25	9	14	22	36	1.2								4			very stiff; plastic; some silt	
														5			Same some orange mottling; Dry	0.0 ppm
SPT	26	8	17	21	38	0.9								6				
														7				0.0 ppm
SPT	27	8	17	22	39	1.1								8				
														9				0.0 ppm
SPT	28	11	21	23	44	1.3								160			Same; w/ some sand in clay @ 101.5	
														1				0.0 ppm
SPT	29	9	18	28	46	1.6								2			Same; grading more silt; DRY	
														3				0.0 ppm
SPT	30	7	19	31	50	1.0								4			Grading to Sandy SILT; wet	
														5				
SPT	31	11	12	33	45	1.5								6			CLAY, dark reddish gray (10R 4/1); DRY	
														7			hard; plastic; transmissa grading	
SPT	32	22	50/5	—	50+	0.7								8			to light gray (10R 7/1); silty SAND	0.0 ppm
														9			@ 107.5	
SPT	33	13	19	20	39	1.7								110			Silty SAND; light Gray (10R 7/1) wet	
														1			dense; poorly graded; fine gravel	0.0 ppm
SPT	34	10	17	20	37	1.2								2			CLAY, dark reddish gray (10R 3/1)	
														3			Stiff; plastic	
SPT	35	11	16	24	40	1.3								4			Sandy SILT w/ clay; light gray @ 113.5 ft	0.0 ppm
														5			CLAY w/ SAND stringers dark reddish gray	0.0 ppm
SPT	36	14	19	24	43	1.6								6				
														7				
SPT	37	18	12	18	30	1.4								8				
														9			AS ABOVE; grading more Sand	0.0 ppm
														120				

WASTE SCIENCE AND TECHNOLOGY CORP.

LOG OF BORING

BORING NO. PW02

SHEET 5 OF 6

CLIENT	PROJECT	PROJECT NO.
USEPA REGION III	Standard Chlorine	047118

PROJECT LOCATION	COORDINATES	ELEVATION (DATUM)	TOTAL DEPTH	DATE START
NEW CASTLE, DE			167	7/26/2004

SURFACE CONDITIONS — DATE FINISH 7/30/2004

DRILLING CONTRACTOR: UNI TECH DRILLING CO. INC.

DRILL RIG	DRILLER	INSPECTOR
MCCRAY 1500	J. Jester	M. Napolitan

CHECKED BY — APPROVED BY

SAMPLE TYPE	SAMPLE NUMBER	SAMPLING SET 6"	2ND 6"	3RD 6"	N VALUE	SAMPLE RECOV.	CORE SIZE	CORING RUN NUMBER	RUN LENGTH	RUN RECOV.	ROD RECOV.	PERCENT RECOV.	ROD	DEPTH IN FEET	CLASSIFICATION OF MATERIAL	REMARKS
SPT	38	16	17	24	41	1.7								120	Sand and clay alternating layers reddish gray (10R 6/1); WET	0.0ppm
SPT	39	7	14	11	25	1.0								1 2 3	SAND; light grey (10R 7/1); dense. Wet; poorly graded; some silt and clay fine grained w/ clay stringer, WET	
SPT	40	13	17	18	35	1.8								4 5		0.0ppm
SPT	41	10	18	20	38	1.7								6 7	CLAY grading to silty SAND; (10R 5/1) @ 165	0.0ppm
SPT	42	10	18	28	46	1.8								8 9	Reddish Gray fine w/ clay Pyritic nodule Silty SAND; Reddish Gray (10R 6/1) WET	
SPT	43	10	13	17	30	1.6								130 1	SILT; Reddish Gray (10R 6/1) no	0.0ppm
SPT	44	14	17	25	42	1.5								2 3	dark Reddish gray (10R 3/1) (WET SAME; grading; Silty SAND; Red (2.5YR 5/6); med to fine	
SPT	45	12	20	26	46	1.5								4 5	SAME; GRADING Silty SAND, RED (2.5YR 5/6); med grained to Fine	0.0ppm
SPT	46	56	50/6	—	50+	0.4								6 7	SAND; coarse; Red (2.5YR 5/6); some Silt.	0.0ppm
SPT	47	100/5	—	—	50+	0								8 9	NO RECOVERY; GRAVEL ZONE DRILL	0.0ppm
SPT	48	100	50/6	—	50+	0.2								140 1	Broken piece of IRON STONE IN SHOE SAND LIGHT GRAY (10R 7/1); dense	
SPT	49	100/6	—	—	100+	0.3								2 3	fine to med grained; well graded SAME (WET)	0.0ppm
SPT	50	150/6	—	—	150+	0.5								4 5	Same w/ Red (2.5YR 5/6) Sand coarse	0.0ppm
SPT	51	75	50/6	—	—	0.3								6 7	WET SAME	
SPT	52	125/6	—	—	—									8 9 150		

WASTE SCIENCE AND TECHNOLOGY CORP.

LOG OF BORING

BORING NO. PW02

SHEET 6 OF 6

CLIENT	PROJECT	PROJECT NO.
USEPA REGION III		47118

PROJECT LOCATION	COORDINATES	ELEVATION (DATUM)	TOTAL DEPTH	DATE START
			167	7/26/2004

SURFACE CONDITIONS — DATE FINISH 7/30/2004

DRILLING CONTRACTOR

DRILL RIG	DRILLER	INSPECTOR
	J. Josta	M. Napolitan

CHECKED BY — APPROVED BY

SAMPLING							CORING								
SAMPLE TYPE	SAMPLE NUMBER	SET 6"	2ND 6"	3RD 6"	N VALUE	SAMPLE RECOV.	CORE SIZE	RUN NUMBER	RUN LENGTH	RUN RECOV.	RQD RECOV.	PERCENT RECOV.	RQD	DEPTH IN FEET	SAMPLE TYPE LOG	CLASSIFICATION OF MATERIAL	REMARKS
SPT	S3	52	50/4	—	50+	0.8								150			
														1		Silt and Sand; light gray	0.0 ppm
														2		interbeds.	
														3			
														4			
														5		GRAVEL/SAND BLOCK DRILLING	
														6			
														7			
														8			
SPT	S4	58	50/4	—	50+	0.5								9		GRAVEL	
														160			
														1		DRILL CHANGE TO CLAY	
														2			
														3			
														4			
														5			
SPT	S5	17	19	27	46	1.2								6		CLAY; Red (2.5YR 5/6) very stiff	
														7		to Hard; Dry mottled Gray	
														8		EOB 167'	EOB
														9			Geophysical log by DGS 7/30/2004
														170			
														1			SP/GAMMA/RES.
														2			
														3			
														4			
														5			
														6			
														7			
														8			
														9			
														180			

Century GEOPHYSICAL CORP.

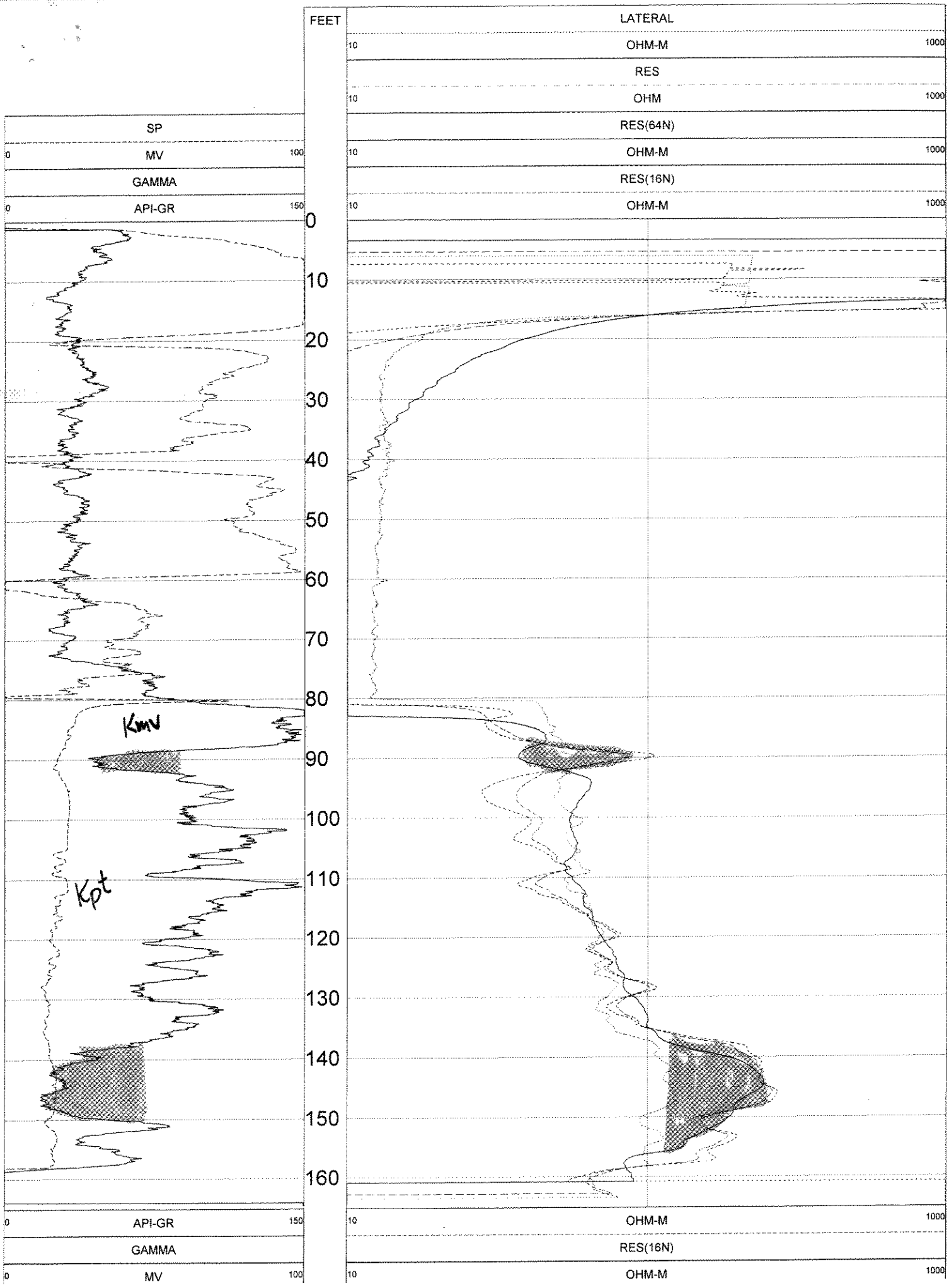
century-geo.com

PW02

COMPANY	: DGS	OTHER SERVICES:
WELL	: PW-2Metachem	
FIELD	: GovLeaRd	
COUNTY	: New Castle	
STATE	: DE	

LOCATION	:		
SECTION	:		
TOWNSHIP	:		
RANGE	:		
API NO.	:		
UNIQUE WELL ID.	: PW-2Metachem		
PERMANENT DATUM	:	ELEVATION KB:	
LOG MEASURED FROM:	ls	ELEVATION DF:	
DRL MEASURED FROM:	ls	ELEVATION GL:	~61

DATE	: 07/30/04
RUN NO.	:
DEPTH DRILLER	: 320
BIT SIZE	: 6
LOG TOP	: 0.70
LOG BOTTOM	: 164.80
CASING OD	:
CASING BOTTOM	:
CASING TYPE	:
BOREHOLE FLUID	: 0
RM TEMPERATURE	: 0
MUD RES	: 0
WITNESSED BY	: many
RECORDED BY	: tmck
REMARKS 1	: multi up 2
REMARKS 2	: 80 ft steel 6"


FEET
SP
MV
0
100
GAMMA
API-GR
0
150
LATERAL
OHM-M
10
1000
RES
OHM
RES(64N)
RES(16N)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
Kmv
Kpt